

DRUG-HETEROPOLYMERS

It has long been recognized that effective delivery systems are preferred for chemotherapeutic agents. The present invention addresses this need. First, chemotherapeutic agents are attached to monoclonal antibodies; second, the antibody is combined with DNA to yield a stable heteropolymer; and, third, the drug-heteropolymer is injected in a therapeutically effective amount.

The present invention is addressed specifically to cancer and rheumatic diseases. Heteropolymers have been used effectively in lupus-like models, but drugs have never been attached. If they were, it could be another step towards more complete treatments. In cancer, drugs have been attached to monoclonal antibodies with disappointing results, because the body turns against the unmasked antibody, sometimes making it antigenic itself. DNA is a stable substance, which does not elicit antibodies, and, in lupus, has been shown to be an aid to administering monoclonal antibodies.

The methods of producing DNA-antibody polymers and attaching drugs to monoclonal antibodies are well known and established; the invention is easily and inexpensively carried out.

Conjunction of Drug with antibody (Example drugs: Doxorubicin)
<pruam, et al: Cancer Research 55, 2352-56, June 1995>.

The antibody is reduced with DTT (trichloroethane) at room temperature. After 30 minutes, the mixture is passed through an RD-10